

### **REMARKS**

Prior to this response Claims 1, 4-6 and 9 were pending in the application. With this amendment, claim 1, 4-6 and 9 have been amended and claim 12-15 have been added. No new matter has been added by this amendment. Thus, claims 1, 4 -6, 8-10, and 12-15 are at issue.

### **Claim Rejections and Amendments to Claims**

#### **35 U.S.C. § 112**

Claim 1, 4-6, and 9 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. Amendments have been made to these claims addressing each and every one of the objections raised by the Examiner, and are believed to overcome these 35 U.S.C. §112 rejections.

#### **35 U.S.C. §102(b)**

Claims 1, 4-6, and 8 were rejected as being “*anticipated*” by Sumida et al. (U.S. Patent No. 5,947,135) in view of Lim et al. (U.S. Patent No. 5,331,986). Applicants respectfully traverse these rejections for at least the reasons discussed below. Applicants have also hereby amended the claims, which Applicants also believe overcome the Examiner’s rejections and which address the Examiner’s comments.

35 U.S.C. §102(b) provides that a “person shall be entitled to a patent unless . . . (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States. “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631(MPEP § 2131). Anticipation

cannot be shown by combining two or more references. *See In re Bond*, 910 F.2d 831, 832(Fed. Cir. 1990). Extrinsic evidence may be used to “explain, but not expand” what a reference means. *See In re Baxter Travenol Labs.*, 952 F.2d 388, 390 (Fed. Cir. 1991).

**Claim 1, 4-6, and 8 Are Not Anticipated Because The Identity Rule Has Not been Satisfied.**

**Claims 1, 4-6 and 8 Are Not Anticipated by Sumida or Lim Singularly.**

On page 7 of the Office Action, the Examiner provided that: “19. Sumida does not expressly disclose the claimed modifying agent feeding device, Sumida also does not expressly disclose a specific means for adding detergent to the dishwasher.....Lim discloses a dishwasher having a detergent reservoir (184) storing a liquid detergent.” Sumida discloses a dishwasher with an ionized water producing portion for electrolyzing water, but does not expressly or inherently described either the claimed modifying agent feeding device, or a specific means for adding detergent to the dishwasher. While Lim discloses a dishwasher having a detergent reservoir (184) storing a liquid detergent, Lim does not expressly or inherently disclose the electrolyzing water produce device. In fact, Sumida specifically teaches away from the use of detergent. As such, the novelty requirements of §102 cannot be triggered by either Sumida or Lim, as neither disclose each and every element of the claimed invention.

**35 U.S.C. §103(a)**

Alternatively, the Examiner has rejected Claims 1, 4-6, and 8 as obvious over Sumida (U.S. Patent No. 5,947,135) in view of Lim (U.S. Patent No. 5,331,986), and has rejected Claims 9-10 under 35 U.S.C. 103(a) as being unpatentable over Sumida in view of Lim, and in further view of Hasegawa (JP10-33448).

35 U.S.C. §103(a) provides that a “patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences

between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negative by the manner in which the invention was made. The factual inquiries enunciated by the Court in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a basis for determining obviousness under 35 U.S.C. 103 are as follows:

- (A) Determining the Scope and Content of the Prior Art;
- (B) Ascertaining the differences between the claimed invention and the prior art; and,
- (C) Resolving the level of ordinary skill in the pertinent art.
- (D) Considering objective evidence present in the application indicating obviousness or nonobviousness.

In the present application, the difference between the instant invention and prior art of record, are at least as follows:

1. Sumida discloses a dishwasher in which the tableware is washed using acid ionized water in a first washing step, whereby dirt is made to form cohesion and is prevented from being reattached to the tableware, so that a washing load in the subsequent washing steps is reduced. Furthermore, the tableware is washed with alkaline ionized water having a pH value of at least 8.5 and a temperature of at least 55° C in at least one of the washing steps, whereby the washing effects on fats and oils, protein and starch are improved.

Lim discloses a dishwashing machine having a washing aid supply unit which is capable of feeding a measured amount of detergent or sterilizing agent into the washing water in a fully automated fashion. On the contrary the claimed invention relates to a washing machine for washing laundry equipped with a new washing auxiliary device to produce electrolyzed water,

and the users do not need to add detergent during washing the laundry by themselves. The dishwasher of Sumida and Lim can be used for washing laundry. As such, the technical field and the object of the claimed invention verses the prior art are different.

2. The structure of the present invention is also different from Sumida. The limitations of “a housing; a washing tub for containing laundry and an outer tub for containing the washing tub” of this invention define the structure of a washing machine for washing laundry, not a dishwasher like Sumida. In Sumida, tableware 16 is set on rack 15, a washing vessel 12 is located under rack 15 for storing washing water 48. Sumida does not disclose the washing tub for containing laundry and an outer tub for containing the washing tub.

3. It has been identified within the examination that Sumida does not disclose the claimed modifying agent feeding device. In addition, Sumida also does not expressly disclose a specific means for adding detergent to the dishwasher.

Though Lim discloses a dishwashing machine having a washing aid supply unit which is capable of feeding a measured amount of detergent or sterilizing agent into the washing water in a fully automated fashion, Lim does not “fairly suggest” that its teaching should be combined with those of Sumida, since it nowhere suggests how to apply its washing aid supply unit to a dishwashing machine with electrolyzed water producing device. On the contrary, by using electrolyzed water or detergent alone, the tableware can be washed as shown in Sumida and Lim. As described in the background of this application, though the electrolytic efficiency is improved by adding the electrolyte to the washing tub when electrolyzed water is applied for washing, the subsequent change in water quality will probably result in fabric hardening; moreover, electrolyte has to be added by the user of washing machine manually. No fabric hardening takes

place in a dishwasher, and a person of ordinary skill would not have the requisite motivation to combine Sumida and Lim.

Meanwhile, even the combination of Sumida and Lim is made by person skill in the art, the invention, as presently claimed, cannot be achieved. Lim does not disclose the electrolyzed water producing device, and one of ordinary skill would not be able to produce the claimed invention, especially the connection of electrolyzed water producing device with the modifying agent feeding device with a dosing and feeding device.

In summary, the claimed invention is not obviousness over Sumida in view of Lim. Applicants have respectfully identified significant differences between amended Claim 1 and the cited art. As such, amended Claim 1 is sufficient to overcome the present rejection. By amendment, Applicants have clearly differentiated Claim 4-6, and 9 in the present application from the cited art referenced in the Office Action. Applicants also request reconsideration of these claims for the same reason as stated above for Claim 1.

### **35 U.S.C. §102 and §103 Rejections**

The Examiner rejected claims 1, 4-6, and 8 as being anticipated by Sumida (U.S. Patent No. 5,947,135). The Examiner also rejected claims 2-8 as being as being obvious over Sumida alone, and claims 9-11 as being obvious over Sumida in view of Hasegawa (JP10-33448).

#### **Claim 1**

Claim 1 has been amended to incorporate the subject matter of claim 2 (now canceled), and is has also been amended to recite the structure of the dosing and feeding device in the modifying agent feeding device. In addition, claim 1 has been amended to include the connection of the dosing and feeding device with the water supply tube in the washing machine, as well as to add the limitation of “the modifying agent is a mixture of one or more detergent.”

These amendments to Claim 1 are fully supported by at least paragraphs 37, 38, 57, and/or 93 within the written description, as well as by at least Figure 6. By these amendments, Applicants have clearly differentiated Claim 1 in the present application from the cited references. Applicants, therefore, respectfully request reconsideration of these rejections and allowance of these claims for at least the following reasons.

Specifically, as described in the Background section of the present application, though the electrolytic efficiency is improved by adding the electrolyte to the washing tube when electrolyzed water is manually applied by the user for washing, the subsequent change in water quality will most likely result in fabric hardening. Moreover, as indicated, the electrolyte must be added by the user to washing machine manually. To overcome at least these disadvantages, one of the objects of the present invention is to provide a washing machine equipped with a new washing auxiliary device having a simple structure that is convenient to install, without requiring the user to manually add the detergent during washing.

To achieve at least these objectives, claim 1 has been amended to require a modifying agent feeding device with a dosing and feeding device, which is a volumetric measuring valve for providing the modifying agent (detergent) at a certain quantity. These limitations make it possible to store the detergent in the modifying agent feeding device during the manufacture of the present invention at the factory, when the washing machine is being sold, or at some other time well in advance of washing. A mixture of one or more detergents stored in the modifying agent feeding device, is supplied into the washing tube automatically without the addition of a detergent by the user during each washing operation.

On the contrary, Sumida only discloses a dishwasher in which an ionized water producing portion for electrolyzing water supplies water from a water supply to produce acid ionized water

and alkaline ionized water. Tableware is washed with acid ionized water in a first washing step. Therefore, dirt attached to the tableware can be discharged in cohesion, and the tableware is washed with alkaline ionized water in at least one of a second or later washing steps. The fats and oils, protein and starch still attached to the tableware are thereby subject to emulsification, hydrolysis and swelling, potentially improving the washing effect. No detergent is added manually, let alone automatically. Thus, Applicants respectfully submit that Sumida does not disclose or otherwise suggest providing a modifying agent feeding device with a dosing and feeding device, which is a volumetric measuring valve for providing a modifying agent (a mixture of one or more detergents) at a certain quantity in the washing machine, with an electrolyzed water-generating device for providing electrolyzed water. Sumida also does not disclose the detailed structure of the modifying agent feeding device and the volumetric measuring valve for providing the modifying agent. The recited technical structure in claim 1 is not a conventional technique for one of ordinary skill and is not disclosed by the cited references of record.

Furthermore, because the mixture of one or more detergents is added into the washing tube automatically in this application, as required by Claim 1, the alkaline ionized water activated by the detergent fed by the modifying agent supply device into the washing tub, the PH value of which is thereby adjusted to between 9 and 11. This PH range is the most beneficial washing condition for efficient washing, fabric hardening is eradicated, and a high detergency ratio can be achieved.

Therefore, in view of the foregoing amendments and remarks, Claim 1, and the claims which are dependent therefrom, are neither anticipated by Sumida, or rendered obvious by

Sumida. As such, Applicants respectfully request reconsideration and withdrawal of these rejections.

Claim 4

Claim 4 has been amended to recite the structures of the modifying agent feeding device and the dosing and feeding device, as well as the connection of the dosing and feeding device with the water supply tube in the washing machine. Claim 4 has also been amended to include the limitation that “the modifying agent is a mixture of one or more detergent.” These amendments to claim 4 are fully supported by at least paragraphs 34, 37, 38, 57, and/or 93, and at least Figure 6. By these amendments, as explained with reference to the above remarks for Claim 1, Applicants have clearly differentiated Claim 4 over the cited references within the Office Action. Applicants, therefore, respectfully request reconsideration and allowance of claim 4, and the claims depending therefrom, for at least the same reasons stated above for claim 1.

Claim 9

Claim 9 has been amended to recite the structures of the modifying agent feeding device and the dosing and feeding device, as well as the connection of the dosing and feeding device with the water supply tube in the washing machine. Claim 9 has also been amended to include specific washing steps relative to the elements of the washing machine, as well as to include the limitation that “the modifying agent is a mixture of one or more detergent.” These amendments to Claim 9 are fully supported by at least paragraphs 32, 33, 34, 37, 38, 57, and/or 93, as well as at least Figure 6. By these amendments, Applicants have clearly differentiated claim 9 over the cited references within the Office Action. Therefore, Applicants respectfully request reconsideration and allowance of Claim 9 for at least the following reasons.



Specifically, Hasegawa is directed to a dishwasher which electrolyzes water supplied from the outside, and which produces strong alkali water and strong acid water. Alkali detergent 18 is supplied from the detergent feed hopper 19 with the opening and closing valve opened, and closed by the signal from the control device. However, Hasegawa does not disclose or otherwise suggest providing a modifying agent feeding device with a dosing and feeding device, which is specifically a volumetric measuring valve for providing the modifying agent (a mixture of one or more detergents) at a certain quantity in a washing machine, with an electrolyzed water-generating device for providing electrolyzed water. More specifically, Hasegawa does not disclose the technical features of:

- a modifying agent feeding device which comprises:

- a liquid storage container having a bottom;

- a dosing and feeding device having an input end and a plurality of output ends, set at a lower part of the liquid storage container for providing modifying agent at a certain quantity, wherein a input end of the dosing and feeding device is connected with a liquid outlet tube at a bottom of the liquid storage container, wherein the dosing and feeding device is a volumetric measuring valve comprising:

- a buffer chamber with a rating volume at the center of volumetric measuring valve,

- a modifying agent valve located at the liquid outlet tube at the bottom of the liquid storage container for introducing modifying agent into the buffer chamber,

- a water inlet valve and a water outlet valve set in the opposite of the buffer chamber,

- an emptying valve at the bottom of the buffer chamber,

- wherein the water inlet valve and the water outlet valve is connected respectively to the first drainpipe which connected to a cathode chamber of the electrolyzing cell for

providing electrolytic solution into the buffer chamber, the water outlet valve is connected to the first drainpipe and discharging the mixture of electrolytic solution and modifying agent from the buffer chamber into the washing tube, and the water inlet valve and water outlet valve alternatively control the water feeding into the buffer chamber and discharging the mixture of electrolytic solution and modifying agent from the buffer chamber into the washing tube by their turn-on and turn-off.

These specific technical features are not conventional to a person of ordinary skill. In addition, Sumida and the other cited references within the Office Action do not disclose or otherwise suggest these technical features, as explained above with reference to Claim 1.

In view of the foregoing, Claim 9 is not obvious over Sumida in view of Hasegawa. As such, Applicants respectfully request reconsideration and allowance of Claim 9.

**Claims Which Depend From Claims 4 and 9**

Applicants also request reconsideration of claims 5-6, 8, and 10, which were rejected as being dependent on rejected independent claims 4 and 9, for at least the following reasons. With the amendments to claims 4 and 9, these claims now require a device that is novel and non-obvious in view of Sumida and/or Hasegawa, as explained with respect to Claims 4 and 9. As a result, Applicants respectfully request reconsideration and allowance of Claims 5-6, 8, and 10.

**CONCLUSION**

Applicants respectfully request entry of the present amendments and examination of the pending claims in view thereof. Commissioner is authorized to charge any fee deficiency, or credit any overpayments, to Deposit Account No. 502261. The Examiner is invited to contact the undersigned if the Examiner believes a telephone conference would expedite allowance of the present claims and application.

Respectfully submitted,

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